PRESCRIBED GRAZING PLAN DESIGN
WORKSHEET 2-B CALCULATIONS
(Use with Worksheet 2-A)

EVALUATE AND IMPROVE AN EXISTING SYSTEM	NEW CALCULATIONS
Needed Information: Total lbs of animals 1,000 lbs = 1 animal unit (au) Hay/pasture forage yield Desired time in a pasture/rotation	Example: 20 cow/calf units (1000 lbs each) Excellent pasture Intense Management 16 acres to graze Field 1 – 4 ac; Field 2 – 4 ac; Field 3 – 6 ac; Field 4 -2 ac

Step 1. Determine animal forage needs by herd by:

A.   Determine animal units (AU) (from Table 4)

   20 x 1.0 = 20 Animal Units (AU)

B.   Determine intake rate (Table 2)

   26 lbs.

C.   Total Forage Demand per day = intake rate x animal units

   26 lbs x 20 AU = 520 lbs.

Step 2. Determine Days on a paddock based on production
(Example: Field 1 is 4 acres)

$$\frac{\text{DM AC (Table 5)} \times \text{Acres in paddock} \times \text{\% utilization (Table 1)}}{\text{Total Forage Demand (Step 1C)}} = \text{Days}$$

$$\frac{2000\text{lbs} \times 4 \text{ acres} \times .55}{520 \text{ lbs}} = 8.5 \text{ days}$$

Adjust days on for horses due to animal impacts.
For horses multiply these days by:
.6 for new grazers
.75 for experienced grazers
1.00 for advanced grazers

Step 3. Determine if there is adequate production for 30 day rest for grass regrowth. Calculate and add all paddocks up and subtract average field in days to account for paddock livestock are in.

Total is 33.9 days
Average field is 33.9/4 = 8.5 days
8.5 + 8.5 +12.7 +4.2 = 33.9 days – 8.5 days = 25.4 days

Step 4. Resize paddocks for optimum management.

Recommended considerations:

Splitting larger paddocks will increase utilization and cause more even grazing on all species present (Table 2)

Optimum management occurs with:

$$\frac{\text{herd animal units x 1000 lbs}}{\text{recommended herd density (Table3)}} = 2 \text{ acres}$$

$$\frac{20 \text{ animal units x 1000 lbs}}{10000 \text{ lbs/ac (Table3)}} = 2 \text{ acres}$$

Resize fields to be close to this number.
In this example, 2 acres will give optimum growth

For horses, due to animal impacts, always add another paddock as a heavy use area and do not count it for forage production.

Step 5. If acres available are inadequate, additional acres or forage need to be added or the number of livestock reduced.

Animal time on a pasture needs to be reduced proportional to short fall. Prescribed grazing exists only if recommended grass heights, from the pasture stick, are maintained. To determine forage shortfall multiply total days less than 30 by Total Forage Demand and divide by expected loss to determine additional acres or hay needed per rotation.

30 days – average rest = days short
30 days – 25.4 days = 4.6 days

Either some hay can be fed at all times or create more grazing acres.

Calculate additional needed forage per rotation

$$\frac{\text{Days short x lbs DM/day total}}{\text{Feeding Efficiency (Table 1)}} = \text{lbs of hay needed per rotation}$$

$$\frac{4.6 \text{ days short x 520 lbs DM/day total}}{.70 \text{ Feeding Efficiency (Table1)}} = 3417 \text{ lbs needed per rotation}$$

OR

$$\frac{\text{Days short x DM/day total}}{\text{Grazing Efficiency (Table 1)}} = \text{additional acres needed per rotation}$$

$$\frac{4.6 \text{ days short x 520 lbs DM/day total}}{.55 \text{ Grazing Efficiency (Table1)}} = 4.3 \text{ acres needed per rotation}$$